

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection on 6 October 2008. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 August 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon (DE 19521924) in view of Spatz et al. (US 5,321,935).

The Simon reference discloses in figure 11 a cap closing machine which includes: a chuck (14); a motor (13); means for torque detecting (23); and a control unit (21) connected to the torque detector to verify the reaching of a threshold value -- see the machine translation of the reference attached to the previous Office action, mailed 31 May 2007. The Simon reference discloses that the torque detector is a transducer. The containers (11) each arrive with a cap (12) from an unseen cap feeding station via conveyor (18), and at the cap closing station the motor (13) screws the cap (12) onto

the container (11). The angle of rotation is measured using sensor (15) and the torque is detected using sensor (23), and these sensors send electrical signals to the controller (21). As stated in the machine translation, the motor is actuated for a number of turns (by use of the angle of rotation sensor), and the torque is detected to determine if the threshold value is reached or exceeded.

Regarding claim 9, the Simon reference meets all of applicant's claimed subject matter with the exception of the steps of: "screwing said cap onto said threaded end of said container for a selected rotation time" (in Simon the screwing on of the cap is for a selected number of rotations); and "near the end of the selected rotation time, determining if a correct closure of said container has occurred in relation to reaching or exceeding said selected threshold torque value, incorrect closure determined if the threshold torque value is not reached or if the threshold torque value is reached before the selected time has elapsed."

The Spatz et al. reference discloses in the figure a cap closing machine which includes: a chuck (5); a motor (9); means for torque detecting (13); and a comparator (21) for comparing the actual torque value to a predetermined torque value (see col. 4), a control unit (19) connected to the torque detector to verify the reaching or non-reaching of a threshold value. The Spatz et al. also discloses detecting torque during a selected number of rotational turns (col. 5, first paragraph) by the use of an angle of rotation presetting, or alternatively detecting torque during a selected time period (col. 4, last paragraph) by the use of a timing member presetting, such that if the application torque M1 or the closure torque M2 is not reached in the preset angular rotation or the

preset time period, the controller (19) issues an error signal. The Spatz et al. reference therefore recognizes the equivalence of the two control arrangements (angle of rotation vs. time period) for achieving the same purpose, and that at the end of the selected rotation time, a determination is made as to whether or not a correct closure of the container has occurred in relation to reaching the selected threshold torque value, with an incorrect closure determined if the threshold torque value is not reached or if the threshold torque value is reached before the selected time has elapsed as discussed at columns 4 and 5 of Spatz et al.

It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified the Simon method, by having substituted the time period control arrangement of Spatz et al. for the angular rotation control arrangement of Simon, in order to screw the cap onto the threaded end of the container for a selected rotation time, because a skilled artisan would recognize that the Spatz et al. reference teaches the equivalence of the two control arrangements (angle of rotation vs. time period) for achieving the same purpose and to have determined near the end of the selected rotation time if a correct closure of the container has occurred in relation to reaching or exceeding the selected threshold torque value, with an incorrect closure determined if the threshold torque value is not reached or if the threshold torque value is reached before the selected time has elapsed.

Regarding claim 10, the Simon method, as modified by Spatz et al., already teaches the sending of an electric signal to a control unit as seen in fig. 1.

Regarding claim 11, firstly, the transitional phrase “consisting essentially of” is construed to be equivalent to the transitional phrase “comprising” because there is an absence of a clear indication in the specification or claims of what the basic and novel characteristics actually -- see MPEP 2111.03. Therefore, with regard to claim 11, the Simon reference meets all of applicant’s claimed subject matter with the exception of the motor means (13) set to operate for a selected rotation time and the control unit (19) determining if a correct closure of the container has occurred in relation to reaching or exceeding the selected threshold torque value near the end of the selected rotation time, the control unit signaling an incorrect closure after the selected time has elapsed, if the threshold torque value is not reached or if the threshold torque value is reached substantially before the selected time has elapsed. As discussed above such features are known from the Spatz et al. reference. It would have been obvious to one having ordinary skill in the art, at the time applicant’s invention was made, to have modified the Simon method, by having substituted the time period motor and control arrangement of Spatz et al. for the angular rotation motor and control arrangement of Simon, in order to screw the cap onto the threaded end of the container for a selected rotation time, because a skilled artisan would recognize that the Spatz et al. reference teaches the equivalence of the two control arrangements (angle of rotation vs. time period) for achieving the same purpose and determining if a correct closure of the container has occurred in relation to reaching or exceeding the selected threshold torque value near the end of the selected rotation time, the control unit signaling an incorrect closure after

the selected time has elapsed, if the threshold torque value is not reached or if the threshold torque value is reached substantially before the selected time has elapsed.

Regarding claim 12, the Simon reference discloses that the torque sensor (23) is a torque transducer, which transducer sends an electrical signal to the control unit.

4. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spatz et al. (US 5,321,935) in view of Simon (DE 19521924) and further in view of applicant's admitted prior art.

In the Office action, mailed 31 May 2007, the examiner stated that Official Notice was taken that a technique of moving a container to a cap feeding station where a cap is placed on a threaded end of the container, followed by taking the container together with the cap to a closing station where the cap is screwed to the container is notoriously old and well known in the packaging art. Applicant did not challenge the examiner's taking of Official Notice and accordingly the subject matter is deemed to be applicant's admitted prior art.

Regarding claim 9, based on the discussion above, the Spatz et al. reference meets all of applicant's claimed subject matter with the exception of how the cap is fed to the container. In Spatz et al. the cap is placed in the chuck by the use of a pick method (see col. 4, line 5) at the location of closing, whereas the claimed method requires moving the container to a cap feeding station followed by taking the container together with the cap to a closing station where the cap is screwed to the container. The Simon reference teaches that the container with the cap thereon is taken from a location where the cap is inherently placed onto the container to the closing station by

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the use of a conveyor (18). Furthermore to the extent that one might argue that Simon does not teach moving the container to a cap feeding station where a cap is placed on a threaded end of the container, applicant's admitted prior art teaches that a technique of moving a container to a cap feeding station where a cap is placed on a threaded end of the container, followed by taking the container together with the cap to a closing station where the cap is screwed to the container is notoriously old and well known in the packaging art. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified the Spatz et al. method by having substituted moving a container to a cap feeding station where a cap is placed on a threaded end of the container, followed by taking the container together with the cap to a closing station where the cap is screwed to the container, for the stationary placing of the cap in the chuck by the pick method at the closing station, as suggested by Simon or by the notoriously old and well known technique, in order to speed up production by conveying the containers and caps.

Regarding claim 11, as was stated earlier in this Office action, the transitional phrase "consisting essentially of" is construed to be equivalent to the transitional phrase "comprising" because there is an absence of a clear indication in the specification or claims of what the basic and novel characteristics actually -- see MPEP 2111.03. The modification of Spatz et al. by Simon and the admitted prior art renders the subject matter obvious.

Finally, note that Spatz et al. discloses detecting torque during selected time period (col. 4, last paragraph) by the use of timing member presetting.

Regarding claim 10, Spatz et al., as modified by Simon and the admitted prior art, discloses that electrical signals are generated and sent to the control unit.

Regarding claim 12, Spatz et al. discloses electrical signals are generated and using an elongation measuring strip system (DMS) for torque sensing, but does not disclose using a transducer. Simon discloses that the torque sensor (23) is a transducer. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified the Spatz et al. machine by having substituted a transducer for the elongation measuring strip system (DMS) as such would have been an obvious matter of design choice to a skilled artisan in the packaging art, and since applicant has not disclosed that a transducer as the torque sensor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with other types of torque sensors.

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art, as applied to claim 11 above, and further in view of Oshima (JP 2009-81387).

Either one of the Spatz et al. machine or the Simon machine fails to disclose the type of motor used or that it is a positional controlled electric motor (claim 13) or a brushless induction motor (claim 14). The Oshima reference teaches that it is old and well known in the relevant art to make use of an electric servo-motor (which is known to a person skilled in the art as a positional controlled electric motor or otherwise known as a brushless induction motor) for screwing a cap to a container where torque control is important, and accurate measuring and control of the motor is desirable. It would have

been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have further modified either one of the Spatz et al. machine or the Simon machine by having substituted an electric servo-motor (known as a positional controlled electric motor or otherwise known as a brushless induction motor), as suggested by Oshima, for the motor thereof as such would have been an obvious matter of design choice to a skilled artisan for the self-evident benefit of providing accurate measuring and control of the motor. Furthermore, applicant has not disclosed that using a positional controlled motor or brushless induction motor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with other types of controllable electric motors.

Response to Arguments

6. Applicant's arguments filed 6 August 2008 have been fully considered but they are not persuasive.

Regarding applicant's arguments concerning the 35 USC 103 rejection, the examiner points out that while the prior art references to Spatz et al. and Simon may teach additional structure and/or steps to achieve the same result as applicant, it is the claims as they are written as to how the claimed invention is interpreted. The claims of the present application are given their broadest reasonable interpretation, and because of that the limitations of the claims are met by the prior art as discussed above.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen F. Gerrity whose telephone number is 571-272-4460. The examiner can normally be reached on Monday - Friday from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen F. Gerrity/
Primary Examiner
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17 October 2008